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NATIONAL SEMINARS FOR RESEARCH IN VOCATIONAL EDUCATION. 65.

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TO INCREASE THE COMPETENCE OF PERSONS ENGAGED IN RESEARCH ACTIVITIES IN THE VOCATIONAL EDUCATION FIELD, FOUR UNIVERSITY SEMINARS WERE CONDUCTED ON (1) VOCATIONAL RESEARCH DESIGN, (2) RESOURCES IN THE SOCIAL SCIENCES RELATING TO VOCATIONAL EDUCATION, (3) PARADIGMS FOR EVALUATION OF EDUCATIONAL PROGRAMS, AND (4) ADMINISTRATION OF DEVELOPMENT, PILOT, DEMONSTRATION, AND EXPERIMENTAL PROGRAMS, AND METHODS OF INITIATING RESEARCH PROPOSALS, FUNDING, REPORTING, AND DATA DISSEMINATION. EVALUATIVE INSTRUMENTS USED TO ASSESS SEMINAR OUTCOMES WERE (1) A PERSONAL DATA QUESTIONNAIRE, (2) AN ADAPTATION OF THE SEMANTIC DIFFERENTIAL DESIGNED TO ASSESS ATTITUDE TOWARD RESEARCH, (3) "BALES SMALL GROUP INTERACTION SCHEMA," AND (4) A PRE- AND POST-TEST ON CONTENT OF THE SEMINARS. THE TOTAL OF 136 PARTICIPANTS ENCOMPASSED 6 MAJOR AREAS OF EDUCATIONAL RESPONSIBILITY. GENERAL CONCLUSIONS SUGGESTED THAT THE SEMINARS WERE SUCCESSFUL AND SHOULD BE CONTINUED. PROCEDURES WERE RECOMMENDED FOR FUTURE SEMINARS. (HB)

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NATIONAL SEMINARS FOR RESEARCH

IN

VOCATIONAL EDUCATION

1965

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University of Illinois

ACKNOWLEDGEMENTS

Although the author of this report was responsible for the evaluation of the four seminars conducted in the spring of 1965 and the reimbursement of participants for their travel expenses, it is hoped that the reader will recognize that the value of the seminars was the result of the dedicated efforts of the director of each seminar and faculty members at the various campuses who assisted the director. These dedicated vocational educators are listed below in the chronological order of the seminars.

University of Nebraska ..... *John K. Coster*
Michigan State University ..... *H. Paul Swoboda*
University of Minnesota ..... *Howard F. Nelson*
The Ohio State University ..... *Robert E. Taylor*

It should be recognized also that the impact of the seminars on vocational education research will be in direct proportion to the future efforts of the participants.

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INTRODUCTION

The efforts of the AVA Research Committee resulted in the initial national seminar on research for vocational educators. This seminar was held at Purdue University in the spring of 1963. The following year the seminar concept was expanded--again through the efforts of the AVA committee--with modest financial assistance from the U. S. Office of Education. The second year saw three national seminars on research: one at Pennsylvania State University (comparable to the initial seminar at Purdue), one at Allerton House at the University of Illinois, and in addition there was a seminar for administrators at Ohio State University.

Building upon two years of experience, a proposal was submitted to the U. S. Office of Education for funding under title 4(c) of the Vocational Education Act of 1963 for support of four seminars conducted in the spring of 1965. These four seminars were as follows: A beginning seminar for vocational educators who had not been invited to previous seminars was held at the University of Minnesota from May 3 to May 7. An intermediate seminar at the University of Nebraska was designed to follow up the presentations made to the participants of the Pennsylvania State University seminar of the preceeding year. This seminar was held from April 11 to April 16. The advanced seminar, designed for vocational educators who had participated at Allerton in 1964 and at Purdue in 1963, was conducted at Michigan State University from April 19 to April 23. The additional seminar for administrators in vocational education was held at Ohio State University from May 24 to May 27.

The proposal requesting funds for the support of participants' travel and seminar costs was approved in early February of 1965. This late date caused some difficulty in recruiting speakers and in fitting seminars into the calendar of participants. (Table 1 shows the distribution of participants at the three seminars and indicates that the original intent of consecutive participation was not fully satisfied.)

In the first two years, seminar evaluation was conducted on an open ended basis; and although the participant's responses were of value in structuring subsequent seminars, it was felt that a more detailed evaluation was in order.

The immediate function of this report is to present an analysis of the data collected in an attempt to evaluate the four seminars held during 1965.

The intent of the evaluation was to assess the contribution made to the participants and not to evaluate the participants as individuals.

TABLE I

DISTRIBUTION OF PARTICIPANTS AT 1965 SEMINARS BY ATTENDANCE AT 1964 SEMINARS

AT ALLERTON

at Michigan State \	yes	no	
yes	26	8	34
no	15	X	
	41		

AT PENN STATE

at Nebraska \	yes	no	
yes	23	14	37
no	17	X	
	40		

AT PREVIOUS SEMINARS

at Ohio State \	yes	no	
yes	9	25	34

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CHAPTER II

CONDUCT OF THE SEMINARS

The seminars are presented in their logical order and not their chronological sequence. Each seminar is reviewed briefly and some general characteristics of the participants are presented and discussed. The flavor of the seminars and the backgrounds of the participants are all that is meant to be conveyed in this chapter.

Beginning Seminar

The beginning seminar was held at the Center for Continuation Study on the campus of the University of Minnesota from May 3 to May 7. Dr. Howard F. Nelson, Department of Trade and Industrial Education, served as host director.

The formal presentations address the problem of research design. Professor Donald G. MacEachern carried the greater part of this burden with his talks on "Analysis of Variance as a Statistical Tool in Research," and "Sampling and Associated Problems in Research." He was ably assisted by other speakers. (For complete program, see Appendix A.)

Following the formal presentations, the participants broke into small groups for round table discussions. The round table discussions served to pinpoint specific problems of interest to individuals and permitted the application of the content of previous speeches. In the latter part of the week the results of the several round table discussions were presented, for critique by a panel of experts, to the entire seminar.

The beginning seminar was attended by 36 people, 32 of whom were primarily concerned with teacher education. This group was somewhat younger than those attending the other seminars, having a median age of 46. Although this group had, quite understandably, completed the least number of research projects (18), it was the most cosmopolitan in terms of educational background with 29 participants having attended two or more colleges. Twenty-eight members had received doctorates; 20 of these were earned in the last six years.

No basis for comparison exists for evaluation of content mastery between the various seminars since each dealt with material peculiar to itself. However, the beginning group showed a mean gain of 34 percent indicated by raw scores on the pre- and post-test.

Intermediate Seminar

The intermediate seminar was held at the Kellogg Center for Continuing Education on the University of Nebraska campus from April 11 to April 16. Dr. John K. Coster, College of Agriculture and Home Economics, was host director.

This seminar was devoted to studying the resources in the social sciences as they relate to vocational education. The highlight of the formal presentations was a speech by Dr. Edmund Gordon on "The Field of Culturally Deprived Youth." A previous fine talk by Dr. Nicholas Babchuk on "The Field of Social Stratification" facilitated the understanding of Dr. Gordon's presentation. (For the complete program see Appendix A.)

Small group workshops, with the assistance of the consultants, discussed proposals already prepared by participants, areas of individual interest, and synthetic problems prepared for discussion by the University of Nebraska planning team.

The intermediate seminar was attended by 34 participants and, like the beginning seminar, it was heavily weighted with people concerned with teacher education. However, this group was also represented by a strong contingent of university administrators. This group showed an excellent background in research experience, having completed a total of 29 research projects, which was on a par with the fourth seminar group and well above the remaining two. The median age of the participants was 42, which was slightly older than the group at Minnesota. Twenty-seven of the participants had attained doctorate degrees of which 15 were earned during the last six years. The areas of home economics, industrial education, agriculture education, and business education were almost equally represented.

Members of this group showed a rather high degree of occupational mobility as indicated by the fact that 20 of the 34 participants had been in their present position four years or less, and only three of them had been in their present position in excess of ten years.

In terms of content mastery of the seminar material, the participants showed a mean gain of 30 percent as indicated by the raw scores taken from the pre- and post-tests.

Advanced Seminar

The advanced seminar was held at the Kellogg Center for Continuing Education on the Michigan State University campus from April 19 to April 23. Dr. H. Paul Sweany, College of Education, was the host director.

The general purpose of this seminar was to discuss paradigms for evaluation of education programs and to offer constructive criticism on research proposals brought to the seminar by the participants. Major presentations were as follows. (For complete program, see Appendix A.)

"The General Nature of Experimental Studies, Their Qualities and Limitations," Dr. Dave Krathwohl, Director, Bureau of Educational Research, Michigan State University.

"Common Patterns of Survey Type Studies," and "Improving Interview Techniques and Questionnaires," Dr. William C. Eckerman, Institute for Social Research, University of Michigan.

"The Nature of Action and Demonstration Proposals," and "Initiating and Conducting Demonstration Research," Dr. Everett M. Rogers, Department of Communications, Michigan State University.

"Psychological Elements in Proposed Studies," and "Psychological Factors that Should be Emphasized in Vocational Education Studies," Dr. Robert Guion, Industrial Psychologist, Bowling Green University.

"Review of Studies with Some Social Emphasis," and "Sociological Questions that Might be Investigated in Vocational Education Research," Dr. Irwin Dietscher, Department of Sociology, Syracuse University.

"Economics Elements of Research Proposals," and "Important Economic Questions Related to Research in Vocational Education," Dr. Albert Blum, School of Labor and Industrial Relations, Michigan State University.

Each presentation was subjected to the scrutiny of a reaction panel and questions from the floor. In addition, each of the speakers was available throughout the week for individual and small group discussion of specific research problems.

Group conferences on (1) experimental research, (2) survey research, (3) action-demonstration research (4) psychology, (5) sociology, and (6) economics afforded the participants the opportunity to concentrate on the area of most concern to them.

The advanced seminar, the third of the series, had 33 participants with a median age of 42.5 years. This group had the highest percentage of doctorate degrees, 88 percent, 17 of which were earned within the past six years. Like the first two seminar groups, this one was heavily loaded with teacher educators with 67 percent of the participants having professorial rank.

This group was characterized by a (1) high degree of job mobility indicated by the fact that more than half of the members had changed jobs within the last five years; (2) considerable research experience with 26 supported research projects completed; and (3) twenty-seven of the members had attended two or more colleges and in this respect ranked a close second behind the participants of the beginning seminar.

Raw score data indicated a gain of 30 percent for this group in terms of content mastery.

Administrative Seminar

The seminar on administration of research was held at the Ohio State University from May 24 to May 27. The host director was Dr. Robert E. Taylor, Director of the Center for Research and Leadership Development in Vocational and Technical Education, The Ohio State University.

This seminar was devoted to studying effective methods of initiating, funding, reporting, and disseminating research proposals. With this as the goal, major presentations were made by the following persons. (For complete program, see Appendix A.)

"Role of Research and Development in Vocational Education," Dr. Henry Brickell, Asst. Superintendent, Manhasset Public Schools, Manhasset, New York.

"Applications and Implications of Industrial Research and Development for Vocational Education," Mr. Frank C. Croxton, Asst. Director, Columbus Laboratories, Battelle Memorial Institute.

"State Organizational Structure and Relationships for Research and Development in Vocational Education," Mr. Allen Lee, Asst. Superintendent for Educational Development in Vocational Education, State Department of Education, Salem, Oregon.

"The New Approach to Research Management," Dr. Desmond L. Cook, Bureau of Educational Research and Service, College of Education, The Ohio State University.

"Administrative Concerns in Assessing Developmental and Demonstration Projects," Dr. David L. Clark, College of Education, The Ohio State University.

"The Development and Approval of a Research Proposal," Dr. Carl Schaefer, Department of Vocational-Technical Education, Rutgers University.

"Effectively Applying Research Results: What Research Reveals," Dr. Everett J. Rogers, Director of AID–MSU Diffusion Project, Michigan State University.

"Applying the Principles of Diffusion to the Utilization of Research," Dr. Roy A. Larmee, Department of Educational Administration, The Ohio State University.

Small group discussions were held which afforded the participants an opportunity to bring out specific questions concerning the above-mentioned topics. Workshop groups were assigned the problem of developing a workable, realistic program structure for research and development in their own state.

The administrative seminar was, as the title indicates, made up almost entirely of persons having administrative responsibilities. With a median age of 47, the 33 participants in this seminar were considerably older than those of the previous three seminars. A majority of the participants were employed in some capacity at the state level whereas members of the other seminars were, as observed previously, primarily teacher educators in the college or university setting.

Only 52 percent in this group had completed their doctorate degree, and only one of these was completed in the past six years. This is contrasted sharply with an average of 82 percent with doctorate degrees from the first three seminars. The job mobility of this group was also observed to be considerably lower. Thirty-four percent of the group had been in their current positions ter or more years, as compared with an average of 14 percent with ten or more years in current positions for the other three groups. The group, as a whole, had a strong research orientation, with 29 research projects completed; most of these had been supported by state agencies.

This group showed a marked gain in content mastery as indicated by an increase of 60 percent on post-test scores over pre-test scores.

Coding of Data

The approach to coding data from the Personal Data Questionnaires was a very simple one. Potential information was examined to determine the probable range of responses and the degree of detail deemed desirable. Since it was necessary to begin coding data prior to the completion of all seminars, the specific code assignments, e.g., 06, Prof. of Educ., were expanded as required.

Summary and Discussion

The methodology and instruments for evaluation will be discussed in subsequent chapters; however, the data presented so far needs to be summarized for all four groups of participants. With the exception of gain scores on content, the data used in this chapter came from a Personal Data Questionnaire completed by the participants prior to their attendance at the seminars.

The data reported in Table II seems to indicate that Vocational Education personnel received their college preparation in a variety of disciplines; however, this is not the case. Many of the major areas of study listed are the function of semantics. For example, one cannot assume that business education, distributive education, commerce, accounting, and business administration are really different curricula. Furthermore, many of the major areas of study in which there are one or two respondents reporting resulted from participants outside of Vocational Education.

TABLE II

Distribution of participants among 26 major areas of study:

		B.S.	M.A.	Ph.D.
01	Dist. Ed.	3	4	0
02	Ed. Admin.	0	8	3
03	Agr. Ed.	38	30	23
04	Secondary Ed.	5	14	6
05	Ind. Ed.	39	31	23
06	Home Ec.	13	13	10
07	Business Ed.	7	7	9
08	Higher Ed.	0	1	7
09	Voc. Ed.	3	8	12
10	Commerce	3	0	0
11	Engineering	4	3	0
12	Nursing	1	0	0
13	Curriculum	0	0	2
14	Evaluation	0	1	2
15	Accounting	1	0	0
16	Bus. Adm.	2	3	0
17	Econ.	3	2	1
18	Sp. Ed.	0	1	0
19	Sociology	1	0	0
20	Math	1	1	0
21	English	2	1	0
22	Science	2	0	0
23	Counseling	2	2	1
24	Social Sci.	2	2	0
25	Botany	2	0	0
26	History	2	2	2
	TOTALS	135	134	101

Approximately 77 percent of the participants received all of their degrees in the same area of study.

Tables III and IV show the distribution of the participants among current professional titles and major areas of responsibility. Even though these tables show a considerable range of positions and responsibilities, it should be noted the colleges and universities represent approximately 80 percent of the total.

As is apparent from Table V, the seminar participants received degrees from colleges and universities in nearly every state in the union.

TABLE III

Distribution of participants among 20 current professional titles:

		N
01	Asst. Prof. Educ.	26
02	Prof. of Educ. (Dept. Chairman)	21
03	Assoc. Prof. Educ.	32
04	State Supervisor (Votec.)	9
05	State Research Co-ordinator	8
06	Prof. of Ed.	14
07	State Supervisor (Nursing)	3
08	Assoc. Prof. (Dept. Chairman)	2
09	State Supervisor (D. E.)	3
10	Prof. of Engr. (Dept. Head)	1
11	Professional Engr.	1
12	Dean (School of Ind. Ed. & Tech.)	4
13	Labor Economist	1
14	Lecturer	1
15	Student (Univ.)	4
16	Assoc. Prof. (Bus. Adm.)	1
17	Consultant, Health Occup.	2
18	State Supervisor (Guidance)	1
19	State Supervisor (Home Ec.)	1
20	Research Co-ordinator (Univ.)	1

TABLE IV

Distribution of participants among major areas of responsibility:

		N
01	Teacher Educator	77
02	Administration (Univ.)	24
03	Administration (State Office)	17
04	Research Co-ordinator (State)	10
05	Administration (U. S. Dept. of Labor)	1
06	Research (Univ.)	7

TABLE V

Universities and colleges at which participants studied:

ALABAMA
Alabama College
Auburn University

ARIZONA
Univ. of Arizona

CALIFORNIA
Calif. Inst. of Tech.
Long Beach State Col.
UCLA
Los Angeles State Col.
Univ. of Southern Cal.
Fresno State

COLORADO
Colorado State

CONNECTICUT
Yale
Univ. of Hartford

DISTRICT OF COLUMBIA
George Washington Univ.

FLORIDA
Univ. of Florida
Florida State

GEORGIA
Georgia State Col. for Women
Univ. of Georgia
Savannah State Col.

HAWAII
Univ. of Hawaii

IDAHO
University of Idaho

ILLINOIS
Ill. State Univ. (Normal)
University of Illinois
Millikin University
Southern Ill. University
Northwestern University

TABLE V Continued

INDIANA
Butler
Ball State
Purdue
Indiana St. Teachers Col.
Indiana University (State
Indiana University

IOWA
State Univ. of Iowa
State College of Iowa
Iowa State University

KANSAS
Kansas State College
Friends University

KENTUCKY
Bowling Green St. Univ.
E. Kentucky St. College
University of Kentucky
Western Ken. St. College

LOUISIANA
Louisiana State Univ.

MAINE
Gorham St. Teachers Col.
University of Maine

MARYLAND
University of Maryland

MASSACHUSETTS
College of the Holy Cross
Harvard
St. Teach. Col-Boston
Boston University

MICHIGAN
Wayne State Univ.
Michigan State Univ.
Univ. of Michigan
Western Michigan

MINNESOTA
Mankato State College
Univer. of Minnesota

MISSISSIPPI
Mississippi State
Mississippi College

MISSOURI
Univ. of Kansas City
Univ. of Missouri
S. E. Missouri St. Col.

MONTANA
Montana State College

NEBRASKA
Univ. of Nebraska

NEW JERSEY
Stevens Inst. of Tech.
Newark State College
Montclair State Col.

NEW YORK
Fordham University
Columbia University
Oswego St. Teach. Col.
Syracuse University
Queens College
New York University
Cornell

NORTH CAROLINA
North Carolina State
Wake Forest
Univ. of North Carolina

OHIO
Ohio State University
Ohio University
Kent State
Western Reserve
Miami University

TABLE V Continued

OKLAHOMA
Oklahoma State Univ.

OREGON
Oregon State Univ.

PENNSYLVANIA
Lock Haven St. College
Carnegie Inst. of Tech.
Duquesne University
Penn State
Millersville State
Univ. of Pittsburg
Univ. of Pennsylvania

SOUTH CAROLINA
Furman University
Clemson University

SOUTH DAKOTA
South Dakota State

TENNESSEE
Tennessee State Col.
Tennessee State Univ.
George Peabody Col.
Univ. of Tennessee

TEXAS
Texas Women's Univ.
North Texas State
Sam Houston State
Univ. of Texas

UTAH
Utah State University
University of Utah

VERMONT
University of Vermont

VIRGINIA
Col. of William and Mary
Virginia Polytech. Inst.

WASHINGTON
E. Washington St. Col.
Washington St. Univ.

WEST VIRGINIA
West Virginia University

WISCONSIN
Wis. State Col.-Milwaukee
Marquette University
Wis. State-Stevens Point
Whitewater State College
Scout
University of Wisconsin
Columbia Univ. Teachers Col.

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CHAPTER III

METHODOLOGY AND INSTRUMENTS FOR EVALUATION

The seminar evaluation was an afterthought injected by the author upon the request of the funding agency. As a consequence of this, and in consideration of the participants (most were university or college faculty or state administrators), it was deemed undesirable if not impossible to have a prolonged testing period before and after each seminar. In many cases the tests that were administered met with considerable disfavor by the participants as being a challenge or a threat to their status in the field.

The validity of pre- and post-testing in assessing change of any group participants has long been a question. One of the factors that contributes to the concern about validity of such a test is the effect of testing upon the participants' behavior and upon the subsequent performance in additional testing. There is little doubt that there was considerable test x treatment interaction in this case (particularly in the case of the questions on content); it can only be hoped that the interaction enhanced the seminars.

The evaluation instruments consisted of:

(1) the personal data questionnaire (mentioned in the preceding chapter);
(2) an adaptation of the semantic differential designed to assess attitude toward research;
(3) Bales small group interaction schema; and
(4) a pre- and post-test on content of the seminars. (The questions on content were prepared by the speakers and only sampled the total content.)

Personal Data Questionnaire

The information presented earlier was collected for descriptive purposes only. Of the information provided by the participants, the following items were saved for partialing purposes during the analysis of the other data.

1. age
2. current responsibility
3. number of research projects completed
4. educational attainment
5. years of experience outside of education
6. major area of study within vocational education

(For the Personal Data Questionnaire, see Appendix B.)

Attitude Assessment

A major aspect of the evaluative effort consisted of exploring the value judgments of seminar participants with respect to relative importance of research in vocational education. In order to accomplish this it was necessary to develop an instrument capable of differentiating between the facilities available to vocational educators for resolving recurring problems in the field. The problems themselves were first delineated by several people in vocational education on an individual basis. These lists were then pooled in a committee and condensed to final form.

The decision was made to employ a fixed set of responses to a series of five stems which were deemed most representative of problems facing contemporary vocational educators. (See Appendix B.) The paradigm was borrowed from the semantic differential although the linear scale did not offer bi-polar responses. All responses were simply placed in opposition to each other so that relative merit of each solution might be indicated by the respondent.

In scoring the responses on the instrument designed to indicate relative value of research, the five factors were paired at opposite ends of a continuum so that each factor opposed every other on a seven-point scale, thus requiring each paired evaluation to have a total score of eight. Since there were ten bi-lateral scales, this means that the distribution for each stem was around a mean of 16. The possible range of scores for each of the five responses was from four to twenty-eight, with an empirical range of from seven to twenty-six.

Small Group Interaction

The paradigm for the assessment of small group interaction

at the four seminars was that developed by Robert F. Bales.[1] The individual responses in each of the small group meetings at each of the four seminars were classified according to Bales' four major categories. At the conclusion of the four seminars, the totals of all of the individual responses and all of the small group activities for each seminar were totaled.

This is predicated upon the assumption that the charges to the small groups at each seminar were sufficiently common, that the activities of each small group were additive. In this fashion the total number of comments in each four categories were calculated for each seminar, and then the percentage of the grand total of comments for the small group activities at each seminar were calculated for each of the four sub-sections of kinds of responses.

For example, at the Ohio State seminar assessments were made of four small group meetings. The tally indicated that there were a total of 341 comments made by the participants in all four groups. Of this 26.5 percent of the comments fell into the expressive-integrative-social-emotional area of positive reactions, and 52 percent of the comments fell into the instrumental-adaptive-task area of attempted answers while 20 percent of the comments fell into the instrumental-adaptive-task area question-type comments, and only 1.5 percent fell into the expressive-integrative-social-emotional area of negative reactions.

The percentage of responses for individuals were then calculated for each of the four areas. Each individual was categorized into one of the four areas depending upon which of his areas of responses deviated the most from the total group responses. (For recording categories used in small group interaction, see Appendix B).

Pre-and Post-Test on Content

In each seminar, the participants were asked to respond to a brief (approximately 15 questions) multiple-choice test. The items contained in these tests were supplied by consultants making major presentations and were designed to sample the factual information presented. (See Appendix B). Although not all consultants provided questions, the total number was deemed adequate for evaluation purposes.

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[1] Readings in Social Psychology, revised edition, Ray B. Swanson, Theodore M. Newcomb, and Eugene L. Hartley, eds., pp. 146-159 (Copyright, 1952, by Henry Holt and Company, Inc.)

The necessity for extreme test brevity precluded any possibility of a thorough going measuring process. This did not constitute a problem, however, since the tests were not intended to discover professional weaknesses of participants, but rather to assess the effectiveness of the seminars in transmitting information concerning research in vocational education.

CHAPTER IV

DATA ANALYSIS

Introduction

Many of the data collected during the course of the seminars have been reported for information only. However, certain variables were selected for further investigation and analysis. Included were a number of items contained in the Personal Data Questionnaire, the responses to the semantic differential, Bales small group categories and the scores for pre and post tests on content. The following discussion provides a look at some of the more interesting aspects of the statistical analysis.

By Seminar

Correlating the bits of data collected on the Personal Data Questionnaire had only obvious results; these results being the high correlation between age and all other variables predicated upon time or chronological sequence. The one exception to this was a negative correlation between age and the scores on the pre and post tests for seminar content. Even here the correlations, although significant, were not sufficiently high to merit serious discussion. It could be hypothesized the negative relationship between age and scores on pre and post tests was a function of time removed from the formal educational setting as a student. However, it could be argued equally well that this is a reflection of status wherein the respondents did not feel compelled to attempt to satisfactorily answer the questions posed them.

There is sufficient indication that an increasing amount of research is being conducted by vocational educators. This has grown from vocational education research conducted mainly by agricultural educators on Hatch Act funds, to include research efforts in the whole sweep of vocational education conducted by a variety of educators, as funds for research became more plentiful.

The one case in which age was not related to a variable where it might be expected was in the case of correlation between participants' age and the number of research projects completed. This low correlation seems to indicate that extended time in the field is no guarantee of research involvement. There

was a high relationship between the number of research projects completed and the number of research projects pending, which seems to indicate that, regardless of age, those who have done research in the past are the ones who are currently proposing research. This validates one of the assumptions used in the invitation of participants to the seminars, particularly at Michigan State where the participants were requested to bring with them proposals for discussion. Most of the proposals brought to Michigan State were either about to be submitted, had been submitted and rejected, or had been submitted and funded. This was not a universal pattern, however; some proposals were written on the spur of the moment merely to satisfy the requirements of the seminar.

Approximately 46 percent of the seminar participants had completed one or more research projects. A slightly higher percentage, 48 percent, had proposals currently being considered for funding. The relationship (as investigated by tetrachoric-r) between those who had completed research and those who had proposals pending yielded a correlation of .50. When the participants were partialed on age (above and below the mean), the resultant correlations were .48 for the younger segment and .57 for the older segment.

This is understandable since the older participants have had more time and thus more opportunity to complete research. However, 50 percent of the younger participants, as compared to only 38 percent of the older participants, had proposals pending. This would seem to support the statement that future research endeavors in the field of vocational education will increasingly be in the hands of the newer generation of vocational educators.

Bales Categories

The variables mentioned above were tested for independence against Bales small group categories with Chi-square. It had been hypothesized that the participants with the most research experience, most recent graduate student experience, most responsible position and highest scores on the pre-test, would exceed the statistically expected frequency in Bales Category 2. (See the Table below).

DISTRIBUTION OF PARTICIPANTS BY CATEGORIES OF EXPRESSION

	Ohio	Minnesota	Nebraska	Michigan
(1) Social-Emotional--Positive	8	8	13	9
(2) Instrumental Adaptive--Answers	9	13	7	5
(3) Instrumental Adaptive--Questions	8	9	9	8
(4) Social-Emotional--Negative	3	1	6	5
(0) No remarks--Hence no category	(7)	(5)	(1)	(5)
	35	36	36	32

In each case the Chi-square was less than the value required for significance. The distribution of participants by categories of expression cannot be explained by use of personal data. The table is presented, therefore, merely to show the distribution of participants' responses in small groups during the four seminars. The categories of expression were also independent of the seminars. Had the recording of comments made by the participants been more detailed, i.e. included the topic under discussion, the distribution might have been more meaningful.

Attitudes Toward Research

The modified version of the semantic differential was used to assess the participants' attitudes toward research. The method of evaluating the individual responses has been discussed previously. Of immediate concern is the relationship between the responses to the five problems posed and the relationship between the pre and the post evaluation.

The five problems posed were those deemed to be of current national importance to vocational education. Therefore, it is not

surprising that the correlations across the problems indicated that the respondents tended to give equal ratings to a given solution across all the problems under consideration. This was true of both the pre and post test. The correlations across the five key words used to solicit responses to the five problems posed are shown below.

MEAN CORRELATION ACROSS QUESTION ON:

	PRE-TEST	POST-TEST
Research	.697	.689
Advisory	.466	.572
Philosophy	.642	.611
Occupational Exp.	.637	.623
Teaching Exp.	.636	.594

The mean correlation between pre- and post- attitudes toward research was quite low (.330), indicating that there were forces at work during the course of the seminars which altered value judgments toward research in terms of applicability to problems of vocational education.

It was hypothesized that participants from the major areas of vocational education may look upon the solution of problems differently. To test the hypothesis, responses on pre- and post- were analyzed by the major areas of vocational education, i.e. agriculture education, trade and industrial education, home economics education, distributive education, and a category called "other" to encompass the people from labor economics, nursing, and allied fields who were in attendance at the seminars.

There is a relationship between work experience outside of education and the area of vocational education in which the participants are currently involved. This relationship is demonstrated by Chi-square comparing all the respondents of the participants in trade and industrial education with all others. The result, Chi-square = 9.99 with three degrees of freedom, has a probability of occurrence by chance of less than .05. This is a very understandable relationship considering the certification requirements for teachers in vocational education, where trade and industrial education has a definite industrial experience requirement that exceeds the experience requirements needed for certification in the other areas of vocational education. Therefore, in

succeeding paragraphs when major area of vocational education is discussed, it is recognized by the author that there is interaction between the major area and the amount of work experience outside of education.

Chi-square was again used to assess the independence of major area of vocational education and the responses to the pre and post Semantic Differential. A significance level of 5 percent was set for this statistic. It was demonstrated thereby that the participants differed among the major areas in vocational education on their response to definitions of curricula content, both on the pre and the post, whereas they differed on the post only in their responses to the question relating to physical plant, equipment needs, and methods of determining instructional media, while there was no difference in their responses, either on the pre or the post, on the questions relating to recruitment of staff and determining the training needs of society. The direction of this difference and the implications will be discussed in succeeding paragraphs.

Further analysis of the responses to questions from the Semantic Differential, revealed an extremely high reliance on **research**. This is not surprising, however, considering the orientation of the seminars. Approximately 88 percent of the seminar participants were grouped into four major areas of endeavor. These were: trade and industrial, agriculture, distributive education, and home economics. All four groups ranked **research** above all other available solutions for nearly all problems in vocational education. There were two exceptions in the home economics group which ranked **teaching experience** first in dealing with questions concerning both staffing and curriculum content. One additional exception was found in the distributive education group which ranked **advisory committees** first on staffing problems. At the lower extreme, however, all groups consistently ranked **philosophy** at the bottom of the list without regard for the problem being dealt with. In terms of ranks, the **advisory committee, occupational experience,** and **teaching experience** responses showed no consistent pattern but were interspersed throughout the seminars.

This consistent heavy dependence upon research raises some questions about the true nature of research and its significance in terms of philosophical considerations. What guides research if not philosophy? What determines how we, as vocation-

al educators, apply the findings of research, if not philosophy? Perhaps we should, in the light of there response patterns, examine our values in an attempt to determine a truly valid framework within which we can deal with problems and issues in vocational education. In the final analysis we cannot say that research is antithetical to philosophy.

CHAPTER V

Conclusions and Recommendations

The conclusions and recommendations contained herein are predicated in part upon the analysis of data as presented in the preceding chapter and in part upon subjective analysis as a result of having been in attendance at all four seminars.

It seems apparent that the consultants who make the major presentations at the seminars should prepare their papers in advance and submit them to the Director of the seminars. This would permit building each seminar into a coherent whole which could be related to the general objectives of all seminars. It seems to follow also that there is a need for the continued presence of the speakers at the seminar. The brief presentations with immediate departure seem to detract considerably from the value of the seminar; and there could be some distinct value in having the speakers in attendance throughout the seminar to participate in more informal discussions with the participants.

In subsequent years of vocational education research seminars, I would expect there could be value in having an increased number of qualified vocational education researchers making presentations, not meaning to suggest that there be any de-emphasis on the reliance of speakers from other disciplines. In fact, it may be that we need speakers from the areas of philosophy and anthropology to condition somewhat the empiricist approach that has been inherent to date in all the seminars.

The small group activities, although of value, seemed to be somewhat synthetic and should be modified. It may be that longer breaks throughout the day in isolated settings where the participants could enjoy refreshments and at the same time discuss the presentations and their own specific problems, would be of more value than the structured small group activities.

There is undoubtedly a need to conduct a different kind of analysis of the seminars. Although the pre-post assessment of knowledge related to the content of the formal presentations was very modest in this endeavor, the interaction with the participants' reception of the presentations seemed to dictate that continued pre-post evaluation of content is in order with perhaps an elaboration to make it more comprehensive.

The collection of personal data on the participants should be continued in approximately the same manner so as to provide continuous data on the kinds of persons who are availing themselves of and being invited to these national seminars. In addition, there could be distinct value derived from incorporating into the seminar evaluation a structured conference evaluation form similar to the two employed at the Nebraska Seminar and the Michigan State by Mr. Gene Weldon of the University of Chicago, as part of a dissertation designed to assess the value of Kellogg Centers for Continuing Education.

The most time consuming and costly portion of the evaluation in this instance, Bales Interaction Categories, should be discontinued since there seems to be no value in the data collected and no relationship between it and other variables.

There are perhaps more suggestions for changing the selection of participants than there are for the conduct of the seminars. Efficiency seems to dictate that one institution do all of the selection and that the background of the participants be considered more thoroughly in accepting people for participation in selected seminars. This would permit association of the interests, backgrounds, and capabilities of the participants and the objectives of the specific seminars. It seems also that we should give some consideration to the age of the participants and the possibility of making contributions to research in vocational education. The intent here is to suggest that it may be desirable to establish a cut-off age at which participants will not be considered.

Although the facilities at the four host institutions this year accommodated the seminars very nicely, it is apparent that on-campus conference facilities do not offer substantially more than could be found in off-campus conference facilities, since the participants find no need or opportunity to take advantage of the library facilities and similar conveniences located on a university campus. As a matter of fact, the isolation from the busy atmosphere of a university campus may make commercial conference facilities more desirable. Furthermore, when this is coupled with the convenience of transportation, it is suggested that other facilities be given serious consideration. It is not meant to imply that the university personnel should not serve as hosts; on the contrary, individual universities hosting seminars in vocational education reap advantages that go beyond the learning and attitude change that takes place among the participants.

As a result of having worked together in this endeavor, there is an increased working relationship among the faculty within vocational education on a given campus and across the discipline lines.

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APPENDIX A

PROGRAM
FIRST NATIONAL SEMINAR
FOR RESEARCH IN VOCATIONAL EDUCATION

Center for Continuing Education
East Campus, University of Nebraska
April 11, 1965, through April 16, 1965

GENERAL CHAIRMAN – *John K. Coster*, Professor of Agricultural Education, University of Nebraska

SUNDAY, APRIL 11, 1965

7:30 p.m. **Reception** – *Hazel Anthony*, in charge

Welcome to Nebraska, *Clifford M. Hardin*

The Seminar Program, *John K. Coster* and *William J. Schill*

MONDAY, APRIL 12, 1965

8:00 a.m. **Registration**

8:30 a.m. *James T. Horner*, Presiding

The Field of Motivation, *David S. Bushnell*

1:30 p.m. *William J. Schill*, Presiding

The Field of Social Stratification, *Nicholas Babchuk*

7:30 p.m. **Current Developments in the Occupational Research and Planning Program**, *Duane M. Nielsen*

TUESDAY, APRIL 13, 1965

8:30 a.m. *Hazel Anthony, Presiding*

The Field of Labor Market Analysis and Trends, Bernard Michael

1:30 p.m. *Max Hansen, Presiding*

The Critical Incident Technique, Robert Fitzpatrick

7:30 p.m. *Presentation of Proposal Problems:*
Dale K. Hayes
Douglas D. Sjogren
Ward Sybouts
Curt Tausky
Lowell Welch

WEDNESDAY, APRIL 14, 1965

8:30 a.m. *Gordon F. Culver, Presiding*

The Field of Culturally Deprived Youth, Edmund Gordon

1:30 p.m. *Organization into Committees*

Committee Work

Group I	Minden Room
Group II	Alliance Room
Group III	Kearney Room
Group IV	York Room
Group V	Fremont Room
Group VI	Hastings Room
Group VII	Library

3:00 p.m. *Tour to Points of Interest*

Max Hansen, in charge

6:30 p.m. **Banquet** – *Howard F. Downs, Presiding*

Introductions

Greetings – *Walter E. Beggs, Duane M. Nielsen*

Program – *James Fox*

THURSDAY, APRIL 11, 1963

8:30 a.m. *Arthur S. Ward, Presiding*

Research in Adult Learning, *Alan B. Knox*

10:00 a.m. **Committee Work**

Consultants:
Clay Gerken
Dale E. Hayes
Mary Lee Hart
Duane M. Nielsen
Kenneth Olson
Douglas D. Sjogren
Ward Schwain
Curt Tausky
Lowell Wolak

FRIDAY, APRIL 12, 1963

8:30 a.m. *James T. Horner, Presiding*

Committee Reports

Seminar Summary and Plans
William J. Schill
John E. Coster

COMMITTEES

Project Director: *Rupert N. Evans*
Seminar Coordinator: *William J. Schill*

Program Committee
John K. Coster, Chm.
Douglas D. Sjogren
Curt Tausky

Planning Committee
James T. Horner, Chm.
Hazel Anthony
Gordon F. Culver
Max Hansen
Arthur B. Ward

PERSONNEL APPEARING ON PROGRAM

Anthony, Hazel, Professor and Chairman, Department of Home Economics Education, University of Nebraska

Babchuk, Nicholas, Professor of Sociology, University of Nebraska

Beggs, Walter K., Dean, Teachers College, University of Nebraska

Bushnell, David S., Director, Occupational Research and Planning Program, Division of Vocational and Technical Education, U. S. Office of Education, Washington

Coster, John K., Professor of Agricultural Education, University of Nebraska; Seminar Chairman

Culver, Gordon F., Associate Professor and Chairman, Department of Business Teacher Education, University of Nebraska

Deems, Howard W., Professor and Chairman, Department of Agricultural Education, University of Nebraska

Fros, James, Professional Entertainer, Lincoln, Nebraska

Fitzpatrick, Robert, Director, Measurement and Evaluation Program, American Institutes for Research, Pittsburgh

Gorhan, Clay, Professor and Director of Counseling Service, University of Nebraska

Gordon, Edmund, Professor and Chairman, Department of Education, Yeshiva University, New York

Hansen, Max, Associate Professor and Chairman, Department of Industrial Arts, University of Nebraska

Hardin, Clifford M., Chancellor, University of Nebraska

Hayes, Dale K., Professor and Chairman, Department of Educational Administration, University of Nebraska

Horner, James T., Associate Professor of Vocational Education, University of Nebraska, Seminar Co-Chairman

Hurt, Mary Lee, Program Specialist, Educational Resources Branch, Occupational Research and Planning Program, Division of Vocational and Technical Education, U. S. Office of Education, Washington

Knox, Alan B., Associate Professor of Educational Psychology and Measurements and Head, Evaluation and Research, Division of Extension, University of Nebraska

Michael, Bernard, Program Evaluation Officer, Division of Vocational and Technical Education, U. S. Office of Education, Washington

Nielsen, Duane M., Director, Educational Resources Branch, Occupational Research and Planning Program, Division of Vocational and Technical Education, U. S. Office of Education, Washington

Orton, Kenneth D., Associate Professor of Educational Psychology and Measurements, University of Nebraska

Schill, William J., Assistant Professor of Vocational and Technical Education, University of Illinois, Urbana; Seminar Coordinator

Sjogren, Douglas D., Assistant Professor of Educational Psychology and Measurements, University of Nebraska

Sybouts, Ward, Assistant Professor of Educational Administration and Secondary Education, University of Nebraska

Tansky, Curt, Assistant Professor of Sociology, University of Nebraska

Ward, Arthur B., Professor and Head, Department of Conferences, University of Nebraska

Welsh, Lowell, Director, Nebraska Vocational and Technical School, Milford, Nebraska

PROGRAM
SECOND NATIONAL SEMINAR
FOR RESEARCH IN VOCATIONAL EDUCATION

College of Education
Michigan State University
April 19, 1965, through April 23, 1965

GENERAL CHAIRMAN – *H. Paul Sweany*, Associate Professor of Education, Michigan State University

MONDAY, APRIL 19, 1965

OPTIONAL PROGRAM
PERT Conference
101 Kellogg Center
Dr. Ted Ward, Director

9:00 - 12:00 a.m. *Dr. Desmond Cook*, Consultant

1:30 - 4:00 p.m. *Dr. Desmond Cook*, Consultant

1:30 - 5:00 p.m. ***Meeting for Seminar Consultants***
Organization of Seminar
Review of Proposals
Selection of Studies to be Reported
Selection of Panel Participants

6:30 p.m. **Registration**

7:00 p.m. ***Opening Session of Seminar***
Plans for the Seminar
Introduction of Consultants
General Overview of Research Proposals - *Dr. David Krathwohl*, Director, Bureau of Educational Research, MSU

9:00 p.m. **Reception**

TUESDAY, APRIL 20, 1965

Experimental Research
Dr. Kenneth Clay, Chairman

8:15 - 9:30 a.m. **The General Nature of Experimental Studies, Their Qualities and Limitations** – *Dr. Krathwohl*, assisted by Selected Seminar participants.

BREAK

10:00 - 10:45 a.m. **Reaction Panel:**
Dr. Kenneth Clay, Chairman
Dr. Robert Guion, Consultant
Dr. Duane Nielsen, U. S. O. E.
Selected Seminar participants

10:45 - 12:00 Noon **Survey Research**
Dr. Peter Haines, Chairman

Common Patterns of Survey Type Studies, and Improving Interview Techniques and Questionnaires – *Dr. William C. Eckerman*, Institute for Social Research, University of Michigan

NOON

1:30 - 2:15 p.m. **Reaction Panel:**
Dr. Peter Haines, Chairman
Dr. Irwin Deutscher, Consultant
Dr. Mary Lee Hurt,
Selected Seminar participants

BREAK

2:45 - 4:00 p.m. **Action or Demonstration Research**, *Dr. Larry Borsage*, Chairman

The Nature of Action and Demonstration Proposals, and Initiating and Conducting Demonstration Research – *Dr. Everett M. Rogers*, Dept. of Communications, MSU, assisted by Selected Seminar participants

4:00 - 4:45 p.m. **Reaction Panel:**
Dr. Larry Ramsaye, Chairman
Dr. Albert Bizzo, Consultant
Dr. Robert Ebel
Selected Seminar participants

DINNER

7:00 - 9:00 p.m. **Vocational Group Meetings**
Home Econ. Educ. – *Mrs. Beverly Coultrup*, Chairman
Bus. and Distr. Educ. – *Dr. Brendan Coleman*, Chairman
Agric. Educ. – *Dr. O. Donald Henders*, Chairman

WEDNESDAY, APRIL 21, 1965

Psychological Aspects of Vocational Education Research, *Dr. Helen Hollandsworth*, Chairman

8:15 - 9:30 a.m. **Psychological Elements in Proposed Studies, and Psychological Factors That Should Be Emphasized in Voc. Educ. Studies** – *Dr. Robert Guion*, Industrial Psychologist, Bowling Green Univ., assisted by Seminar participants

BREAK

10:00 - 10:45 a.m. **Reaction Panel:**
Dr. Helen Hollandsworth, Chairman
Dr. William Eckerman, Consultant
Dr. Duane Nielsen, U. S. O. E.
Selected Seminar participants

Sociological Aspects of Vocational Education Research, *Dr. Raymond Clark*, Chairman

10:45 - 12:00 Noon **Review of Studies With Some Sociological Emphasis, Sociological Questions That Might be Investigated in Vocational Education Research** – *Dr. Irwin Deutscher*, Department of Sociology, Syracuse Univ., assisted by Seminar participants

NOON

1:30 - 2:15 p.m. **Reaction Panel:**
Dr. Raymond Clark, Chairman
Dr. Everett Rogers, Consultant
Dr. Frank Blackington, Dept. Sec. Educ.
Selected Seminar participants

BREAK

Labor Economics Aspects of Vocational Education Research – *Dr. Raymond Garner*, Chairman

2:45 - 4:00 p.m. **Economics Elements of Research Proposals, and Important Economic Questions Related to Research in Vocational Education** – *Dr. Albert Blum*, School of Labor and Industrial Relations, MSU, assisted by Seminar participants

4:00 - 4:45 p.m. **Reaction Panel:**
Dr. Raymond Garner, Chairman
Dr. David Krutkowski, Consultant
Dr. Mary Lee Hurt, U. S. O. E.
Selected Seminar participants

THURSDAY, APRIL 22, 1965

Small Group Sessions with Consultants,
Dr. Paul Sweney, Chairman

8:15 - 9:45 a.m. **Group Conferences**
1. Experimental Research
2. Survey Research
3. Action-Demonstration Research
4. Psychological
5. Sociological
6. Economics

BREAK

10:15 - 11:45 a.m. **Group Conferences**

1. Experimental Research
2. Survey Research
3. Action-Demonstration Research
4. Psychological
5. Sociological
6. Economics

NOON

1:15 - 2:00 p.m. ***Review of Types of Research in 4-c Proposals; Gaps in Proposals; A Long-range Research Program in Voc. Educ.*** – *Dr. Duane Nielsen*

2:15 - 3:00 p.m. ***Reaction Panel:***

Dr. Paul Sweany, Chairman
Dr. William Eckerman
Dr. Everett Rogers
Dr. Robert Guion
Dr. Irwin Deutscher
Dr. Albert Blum

3:30 - 5:00 p.m. ***Individual or Small Group Conferences with:***

Dr. Eckerman
Dr. Rogers
Dr. Guion
Dr. Deutscher
Dr. Blum

FRIDAY, APRIL 23, 1965

8:15 - 9:45 a.m. **Statistical Analyses for Computer Users** – *Dr. Charles Wrigley, Computer Institute for Social Science, MSU*

BREAK

10:15 - 11:30 a.m. **Evaluation of Seminar** – *Dr. William Schill, Coordinator of Research Seminars, Univ. of Illinois*

11:45 a.m. **Seminar Luncheon**

PROGRAM
THIRD NATIONAL SEMINAR
FOR RESEARCH IN VOCATIONAL EDUCATION

Center for Continuation Study
University of Minnesota
May 3, 1965, through May 7, 1965

GENERAL CHAIRMAN – *Howard F. Nelson*, Professor and Chairman, Department of Trade and Industrial Education

MONDAY, MAY 3, 1965

9:00 a.m. **Greetings and Welcome** – *Dean Robert J. Keller*, College of Education

Overview and Plan of Seminar – *Howard F. Nelson*, Chairman

Introduction of Vocational – Education Personnel

Seminar Evaluation – *William J. Schill*, Coordinator of Seminar

10:15 - 11:15 a.m. **Nature, Scope and Needs for Research in Vocational Education**, *Dean Nielsen*, Director, Educational Resources Development Training Branch, U. S. O. E.

11:15 - 12:00 Noon **Questions and Discussions** – *Dean Nielsen*

LUNCH

1:15 - 2:15 p.m. **What Research Is** – *Dave R. Krathwohl*, Professor of Education, Michigan St. Univ.

2:15 - 3:00 p.m. **Round Table Discussions**

BREAK

3:30 - 4:30 p.m. **What Research Is,** continued

4:30 - 5:00 p.m. **Questions and Discussion** – *Dave R. Krathwohl*

TUESDAY, MAY 4, 1965

Ken G. Price, Chairman
Professor, Bus. Educ.

9:00 - 10:00 a.m. **Design of Educational Experiments** – *Dave R. Krathwohl*

BREAK

10:30 - 11:00 a.m. **Analysis of Variance as a Statistical Tool in Research,** *Donald G. VanEschen*, Assistant Professor, College of Education

11:00 - 11:45 a.m. **Round Table Discussions**

LUNCH

1:15 - 2:00 p.m. **Design of Educational Experiments,** continued

2:00 - 3:00 p.m. **Analysis of Variance,** continued

BREAK

3:30 - 4:15 p.m. **Round Table Discussions**

4:15 - 5:00 p.m. **Questions and Discussion Both Topics** – *Dave R. Krathwohl* and *Donald G. VanEschen*

WEDNESDAY, MAY 5, 1965

Harry B. Kitts, Chairman,
Professor, Agric. Education

9:00 - 10:00 a.m. **Analysis of Variance** – *Donald C. MacEachern*

BREAK

10:30 - 11:00 a.m. **Round Table Discussions**

11:00 - 11:45 a.m. **Questions and Discussions** – *Donald C. MacEachern*

LUNCH

Problems Associated with Proposing, Funding, Negotiating and Managing

1:15 - 2:00 p.m. **For the Researcher** – *David P. Campbell*, Assoc. Prof. and Director, Interest Measurement Res. Center

2:00 - 2:45 p.m. **For the University or College** – *Richard Elliott*, Research Contract Coordinator, University of Minnesota

BREAK

3:15 - 3:45 p.m. **Round Table Discussions**

3:45 - 4:45 p.m. **Questions and Discussion** – *David P. Campbell and Richard Elliott*

THURSDAY, MAY 6, 1965

Warren G. Meyer, Chairman, Assoc. Prof., Dept. Educ.

Group Generated Problems

9:00 - 10:00 a.m. **Round Table Groups**

BREAK

10:30 - 11:45 a.m. *Round Table Groups*

LUNCH

1:15 - 2:15 p.m. *Sampling and Associated Problems in Research*, Donald C. MacEachern

BREAK

2:45 - 3:45 p.m. *Sampling and Associated Problems in Research*, continued

3:45 - 4:30 p.m. *Round Table Discussions*

4:30 - 5:00 p.m. *Questions and Discussion* – Donald C. MacEachern

FRIDAY, MAY 7, 1965

Ramona Ford, Chairman,
Professor and Asst. Director, School of Home Economics

9:00 - 10:30 a.m. *Critique of Group Generated Problems* – Panel of Experts

BREAK

11:00 - 12:00 Noon *A Friend Visits*

LUNCH

1:00 - 1:45 p.m. *Research and Development in Education* – Donald E. Smith, Assistant Vice President, Academic Administration, University of Minnesota

Adjournment *A Safe Journey Home* – Your Vocational Education Colleagues, University of Minnesota

PROGRAM
FOURTH NATIONAL SEMINAR
FOR RESEARCH IN VOCATIONAL EDUCATION

Agricultural Administration Auditorium
The Ohio State University
May 24, 1965, through May 27, 1965

GENERAL CHAIRMAN – *Robert E. Taylor*, Director Center for Research and Leadership Development in Vocational-Technical Education, Ohio State University

MONDAY, MAY 24, 1965

Robert M. Reese, Chairman

8:30 - 9:00 a.m. ***Registration and Coffee Hour***

9:00 - 9:40 a.m. ***Pre-Seminar Evaluation***, by Participants

9:00 - 10:00 a.m. ***Introduction of Participants***

10:00 - 10:10 a.m. ***Welcome to The Ohio State University*** – *John E. Corbally, Jr.*, Vice-President for Administration, OSU

10:10 - 10:35 a.m. ***Overview of the Seminar*** – *Robert E. Taylor*

10:35 - 11:15 a.m. ***New Imperatives for Research and Development in Vocational Education*** – *David Bushnell*, Director, Occupational Research and Planning Program, Division of Vocational and Technical Education, U. S. Office of Education

11:15 - 12:00 a.m. ***Group Interaction and Questions***

12:00 - 1:30 p.m. **Lunch**

1:30 - 2:30 p.m. ***Role of Research and Development in Vocational Education*** – *Henry M. Brickell*, Assistant Superintendent, Northeastern Public Schools, Northeast, New York

2:30 - 3:15 p.m. ***Reactor Panel to Presentation*** – *Dr. Henry Brickell*

3:15 - 3:30 p.m. **Coffee Break**

3:30 - 4:30 p.m. **Small Group Discussions**

6:00 p.m. **Banquet**

Toastmaster – *William Logan*

Introduction of Guests

Entertainment

Applications and Implications of Industrial Research and Development for Vocational Education – *Frank C. Croxton*, Asst. Director, Columbus Laboratories, Battelle Memorial Institute

TUESDAY, MAY 25, 1965

William Logan, Chairman

9:00 - 9:20 a.m. ***Feedback from Small Group Discussion Held*** Preceding Day

9:20 - 10:20 a.m. ***State Organizational Structure and Relationships for Research and Development in Vocational Education*** – *Allen Lee*, Asst. Superintendent for Educational Development in Vocational Education, State Department of Education, Salem, Oregon

10:30 - 10:35 a.m. **Coffee Break**

10:35 - 12:00 a.m. **Question Period and Round Table Discussions on State Organizational Structure and Relationships in Terms of Administering a Program of Research and Development**

12:00 - 1:30 p.m. **Lunch**

1:30 - 3:00 p.m. **Panel – Present State Programs for Research and Development in Vocational Education: What We Have and What We Would Like To Have. –**

Ronald Lester, Jr., Director of Research, Division of Voc.-Ed., University of Georgia

Allen Robertson, Assoc. in Vocational Educ. Research, State Department of Education, New York

Charles L. Langdon, Director of Voc-Ed. for Research, State Department of Educ., Michigan

V. E. Gurgenon, Chief of Research and Statistics, Board of Vocational Educ. and Rehab., Springfield, Illinois

Edward R. Towers, Moderator

3:00 - 3:15 p.m. **Coffee Break**

3:15 - 4:30 p.m. **Workshop Groups – Assignment: Develop a Workable, Realistic Program Structure for Research and Development in My own State**

4:30 - 4:45 p.m. **Homework Assignment: Which Research Developmental Proposal Should I Approve? Why?**

7:00 p.m. ***Evening Session: The New Approach to Research Management*** – *Desmond L. Cook, Professor, Bureau of Educational Research and Service, College of Education, The Ohio State University*

Discussion and Plans Concerning Establishment of an Affiliated Organization Devoted to Research Within the American Vocational Association by Persons Concerned With The Administration of Research – *V. E. Burgener* – Chairman

WEDNESDAY, MAY 26, 1965

Ralph E. Bender, Chairman, Department of Agricultural Education

8:30 - 10:00 a.m. ***Administrative Concerns in Assessing Developmental and Demonstration Projects*** – *David L. Clark*, Assoc. Dean, College of Education, The Ohio State University

10:00 - 10:15 a.m. **Coffee Break**

10:15 - 12:15 p.m. ***Panel – Procedures and Techniques for the Administration of Research***

Orville J. Bentley, Director, South Dakota Agricultural Experiment Station, Brookings, South Dakota

Calvin Cottrell, Assistant Director for Voc.-Ed., American Institute for Research, Pittsburgh, Penn.

Egon Guba, Director, Bureau of Educational Research Services, The Ohio State University

Robert Burton, Laboratory Director, Circleville Research and Development Laboratory, E. I. DuPont de Nemours and Company, Circleville, Ohio

Ralph E. Bender, Moderator

12:15 - 1:45 p.m. **Lunch**

1:45 - 2:45 p.m. **The Development and Approval of a Research Proposal** – *Carl Schaefer*, Chairman, Department of Voc.-Tech. Education, Rutgers University

2:45 - 3:00 p.m. **Coffee Break**

3:00 - 4:30 p.m. **Small Discussion Groups**

4:30 - 4:45 p.m. **Report of Small Discussion Groups Back to Seminar participants**

THURSDAY, MAY 27, 1965

Robert E. Taylor, Chairman

8:30 - 9:15 a.m. **Effectively Applying Research Results: What Research Reveals** – *Everett J. Rogers*, Assoc. Professor of Communications and Director, AID–MSU Diffusion Project, MSU

9:15 - 9:45 a.m. **Reaction Panel to Presentation** – *Everett J. Rogers*

10:05 - 10:20 a.m. **Coffee Break**

10:30 - 1:15 p.m. **Applying the Principles of Diffusion to the Utilization of Research** – Roy A. Larson, Assoc. Professor, Department of Educ. Administration, The Ohio State University

12:15 - 1:45 p.m. **Lunch**

1:45 - 2:15 p.m. **Summary Implications of Principles of Diffusion for Administering Change** – Jim Clary, Acting Assoc. Dir., Voc.-Ed., State Dept. of Educ., South Carolina

2:15 - 4:00 p.m. **Policy Implications for Administering Programs of Research** – James E. Wallace, Occupational Research and Planning Program, Division of Voc.-Tech. Education, U. S. Office of Education

PURPOSE OF SEMINAR

To improve the quality and quantity of research and development in vocational education.

OBJECTIVES

1. To develop a concept of the role of research and development in state programs of vocational education and the conditions essential to its success.
2. To develop an understanding of a functional organizational structure for conducting a program of research and development in vocational education.
3. To clarify key individual and organizational roles and relationships.
4. To develop competencies in administering a program of research and development.
5. To develop an understanding of the dynamics of planned change and its application to vocational education.
6. To develop capacity and support for research and development in vocational education.

SEMINAR PLANNING COMMITTEE

Bender, Ralph E., Chairman, Department of Agricultural Education, The Ohio State University

Dirks, Marie M., Professor, Home Economics Education, The Ohio State University

Hanna, James Marshall, Professor, Business Education, The Ohio State University

Logan, William B., Director of Distributive Education Institute and Professor of Education, The Ohio State University

Reese, Robert M., Director, Trade and Industrial Education Services and Professor of Education, The Ohio State University

Taylor, Robert E., Seminar Director and Director, The Center for Leadership Development in Vocational and Technical Education, The Ohio State University

Towers, Edward R., Associate Professor, Industrial Arts Education, The Ohio State University

Wells, Inez R., Professor, Business Education, The Ohio State University

APPENDIX B

SEMINAR FOR TRAINING OF RESEARCHERS IN VOCATIONAL EDUCATION

PERSONAL DATA QUESTIONNAIRE

In conjunction with the National Seminars on research in vocational education, it has been decided to try to make a more objective evaluation than has been accomplished in the past. To this end we would appreciate very much if you, as a prospective participant, would provide the personal data requested below.

Name..... Age.....

Educational Attainment	Year Degree Granted	Inst. Granting Degree	Major Area of Study
Baccalaureate	.....	.....	.....
Master's	.....	.....	.....
Doctorate	.....	.....	.....

Title of current position.....

Number of years served in current position.....

Major responsibilities in this position.....

.....

Supported res. that has been completed	Source of support	Year completed
.....	.....	.....
.....	.....	.....
.....	.....	.....

Research Proposals Pending	Source of Support Requested
.....	.....
.....	.....

Major area of occupation experience other than education	Years
.....	.....

Shown here are five stems representing current problems in Vocational Education. These statements were presented to seminar participants on the opening and final days of each seminar. Each stem was followed by the response scales seen below which required a series of ten value judgments by each responsent.

1. The media of instruction to be used in the classroom can best be determined by:

2. Decisions relating to physical plant and equipment in Vo-Ed. can best be resolved through:

3. Resolution of problems in Vo-Ed. relating to recruitment of competent staff can best be done through:

4. The organization of curricular content can best be accomplished through:

5. Voc. educators can best be made aware of the training needs of society through:

research –:–:–:–:–:– advisory committees

philosophy –:–:–:–:–:– research

occupational experience –:–:–:–:–:– philosophy

advisory committees –:–:–:–:–:– teaching experience

occupational experience –:–:–:–:–:– research

research –:–:–:–:–:– teaching experience

teaching experience –:–:–:–:–:– occupational experience

advisory committees –:–:–:–:–:– philosophy

philosophy –:–:–:–:–:– teaching experience

advisory committees –:–:–:–:–:– occupational experience

2 of ~

BALES INTERACTION RECORDING CATEGORIES

1. Shows solidarity, raises other's status, gives help, reward
2. Shows tension release, jokes, laughs, shows satisfaction
3. Agrees, shows passive acceptance, understands, concurs, complies
4. Gives suggestions, direction, implying sutonomy for others
5. Gives opinion, evaluation, analysis, expresses feeling, with
6. Gives orientation, information repetition, confirms
7. Asks for orientation, information repetition, confirmation
8. Asks for opinion, evaluation, analysis, expression of feeling
9. Asks for suggestion, direction, possible ways of action
10. Disagrees, shows passive rejection, formality, withholds help
11. Shows tension, asks for help, withdraws out of field
12. Shows antagonism, deflates other's status, defends or asserts self

Shown here are two questions from each of the four seminars. These are fairly representative of the content evaluation instruments.

Employing PERT in designing a demonstration project will usually result in:

(a) Better control of interactive effects in the proposal design.

(b) Greater internal consistency in the design of the proposal.

(c) More reasonable estimates of the time required to complete the project.

(d) Greater generalizability of project results.

In discussing the design and evaluation of a demonstration project, the investigator need not concern himself with:

(a) Instrument development

(b) Generalizability

(c) Dissemination

(d) Internal validity

The analysis of variance procedure

(a) has replaced the now discredited t-test procedures in statistical practice.

(b) enables an investigator to study several factors simultaneously.

(c) is limited in utility because of the extensive calculations required.

(d) considers variances, whereas t-test procedures are concerned with means.

When an investigator randomly divides all ninth grade students in a school into two method groups (A or B), he may generalize his findings to

(a) ninth grade students.

(b) ninth grade students in this school.

(c) ninth grade students in this school this year.

(d) ninth grade students in this school this year if taught by Method A (or Method B).

A measure of job proficiency is reliable to the extent that it:

(a) is based on actual performance on a job.

(b) gives the same quantitative description on different occasions.

(c) is an accurate measure of performance.

(d) discriminates between good and poor performers.

(e) is flexible enough to compare different people in different situations.

The researcher involved in studying the training of the hard core unemployed has to take into account all of the following except one.

(a) when the hard core unemployed worker finishes training he does not generally benefit by securing a job.

(b) it is hard to attract him into training programs.

(c) he drops out of the programs more often than those who are not hard core employed.

(d) he has need for immediate gratification.

(e) the importance of "significant others" to the hard core unemployed.

Among the major rank systems, the one which is most likely to predict behavior is:

(a) occupation

(b) income and/or wealth

(c) education

(d) racial descent

(e) ethnic descent

(f) family background

The critical incident technique is least effective in establishing:

(a) a comprehensive list of job requirements.

(b) the operational meanings of the job requirements.

(c) a reliable set of job requirement categories.

(d) the relative importance of the job requirements.

(e) both (+) and (−) aspects of job requirements.

APPENDIX C

DISTRIBUTION OF RESPONSES ON SIX SETS OF VARIABLES

TABLE I

Age	Number
31 or less	3
32 - 33	10
34 - 35	11
36 - 37	8
38 - 39	8
40 - 41	14
42 - 43	13
44 - 45	20
46 - 47	12
48 - 49	6
50 - 51	9
52 - 53	6
54 - 55	5
56 - 57	6
58 - 59	3
60 & over	3
TOTAL	137

TABLE II

Years in Current Job	Number
Less than 1	3
1 - 5	79
6 - 10	36
11 - 15	9
16 & over	10
TOTAL	137

TABLE III

Number of Projects	Number of Participants
0	81
1	56
2	28
3	15
4 or more	8
TOTAL COMPLETED	107

TABLE IV

	Yes	No	Total
Research Projects Pending	60	77	137

TABLE V

Overall Small Group Problem of Evaluation

Distribution of Participants by Categories of Expression

	Ohio State	Minnesota	Nebraska	Michigan State
1-Social Emotional Positive	8	8	13	9
2-Instrum. Adaptive Answers	9	13	7	5
3-Instrum. Adaptive Questions	8	9	9	8
4-Social Emotional Negative	3	1	6	5
0-No remarks hence, no category	(7)	(5)	(1)	(5)
	35	35	36	32

TABLE VI

Content Test Scores

	Pre	Post
Range	1 - 15	2 - 19
Mean	6.52	9.34
Std. Dev.	3.05	6.00

APPENDIX C

DATA

Responses to Problems on Semantic Differential Format

		PRE-TEST		POST-TEST	
PROBLEM	RESPONSE	Mean	Std. Dev.	Mean	Std. Dev.
Vocational educators can best be made aware of the training needs of society through:	Research	20.5	5.1	21.1	5.1
	Advisory Commit.	12.3	4.3	12.1	4.1
	Philosophy	12.8	4.5	12.7	5.0
	Occupat. Exper.	14.6	4.6	13.7	4.4
	Teaching Exper.	17.6	4.9	17.9	4.9
The media of instruction to be used in the classroom can best be determined by:	Research	20.1	5.7	21.3	5.7
	Advisory Commit.	16.4	5.0	16.1	4.8
	Philosophy	11.7	4.4	10.9	4.7
	Occupat. Exper.	15.6	4.8	15.3	4.7
	Teaching Exper.	13.8	4.9	13.6	4.4
Decisions relating to physical plant and equipment in Vocational Education can best be resolved through:	Research	18.3	5.1	19.0	5.7
	Advisory Commit.	15.8	4.5	15.4	4.7
	Philosophy	11.7	4.3	11.4	4.7
	Occupat. Exper.	16.0	4.4	15.9	4.3
	Teaching Exper.	15.8	4.5	16.0	4.6
Resolution of problems in Vocational Education relating to recruitment of competent staff can best be done through:	Research	16.6	5.2	17.8	6.2
	Advisory Commit.	16.2	4.7	16.3	5.0
	Philosophy	13.0	4.6	12.8	4.6
	Occupat. Exper.	16.1	4.5	15.2	4.4
	Teaching Exper.	15.9	4.5	15.7	4.5
The organization of curricular content can best be accomplished through:	Research	19.1	4.9	19.5	5.5
	Advisory Commit.	14.7	4.3	14.5	4.8
	Philosophy	13.1	4.7	12.7	4.9
	Occupat. Exper.	15.0	4.6	15.0	4.4
	Teaching Exper.	15.7	4.6	16.2	4.9

APPENDIX D

List of the Participants by Seminar

NEBRASKA

David Allen
Margaret Barkley
V. Ray Cardozier
Kenneth Clay
Aleene Cross
Raymond Dannenberg
Jerry Dobrovolny
Everett Edington
Kenneth Ertel
Dr. Frigiola
Pauline Garrett
Anna Gorman
James Horner
Wagner House
Roland Krogstad
Otto Legg
Herschel Lester, Jr.
Nell Logan
James McComas
John O'Brian
William Pasewark
Bernadine Peterson
Harves Rahe
Agnes Ridley
H. James Rokusek
William Runge
Dora Sheldon
Charles Steadman
Jacob Seem
George Smrm
H. Paul Sweany
A. I. Thomas
Edgar S. Wagner
John R. Williams
Lewis Yoke

MICHIGAN

Carl Bartel
Roger Bowlby
S. T. Brantner
Robert Campbell
John Coster
Lucy Crawford
Dorothy Crunk
Harold Cushman
Charles Drawbaugh
Alfred Drew
Edward Eikman
Joseph Impellitteri
Hildegarde Johnson
John Kames, Jr.
Elizabeth Kerr
Rutherford Lockette
Calvin Lowe
Ralph Mason
Warren Meyer
Wilbur Miller
Jerome Moss
George O'Kelley
Charles Porter
Elizabeth Ray
Charles Rogers
Harland Samson
Margurite Scruggs
William Schill
William Spence
Glenn Stevens
Robert Taylor
Orville Thompson
Robert Tomlinson

MINNESOTA

E. P. Addison
Raymond Agan
Sue Alder
Joseph Arnold
R. A. Baker
Marguarite Barra
David Bjorkquist
E. E. Clanin
Nathan Cross
Gene Dahlin
John Erickson
Nevin Frantz
G. R. Fuller
Ralph Gallington
James Hensel
Fern Horn
Douglas Jaeschke
Thomas Jackson
Samuel Kerr
Denis J. Kigin
Elsie Leffingwell
Robert Lorenzen
Gene Love
Austin Loveless
L. C. McDowell
Gordon McMahon
Bernadine Meyer
Mark Miller
Robert R. Randleman
J. H. Rodgers
Dominga Rodriguez
Bert Sharp
Jerry Streichler
A. R. Suess
Fred Tom
Ben Vineyard
J. R. Warmbrod

OHIO STATE

Joseph Bailey
Melvin Barlow
Rufus Beamer
Lee Bodkin
George Brandon
Donald Brill
Carl Brown
Clarence Bundy
V. E. Burgener
Ruth Burris
Virgil Christensen
Joe Clary
Eugene Darr
Elvin Eyster
Melvin Garner
F. E. Hartzler
James Hastings
Kenneth Hoyt
Ray Jongewood
Ronald Kaiser
Carl Lamar
Charles Langdon
Arthur Lee
Donald Lux
Thaine McCormick
Thomas Mock
Paul Muse
Mark Nichols
Milton Olson
Cleo Reinwald
Alan Robertson
A. G. Shepherd, Jr.
Ruth Seovall
Vernon Swenson
Errol Terrell
A. Delmar Walker
George Wiegers
Wilmer Wise